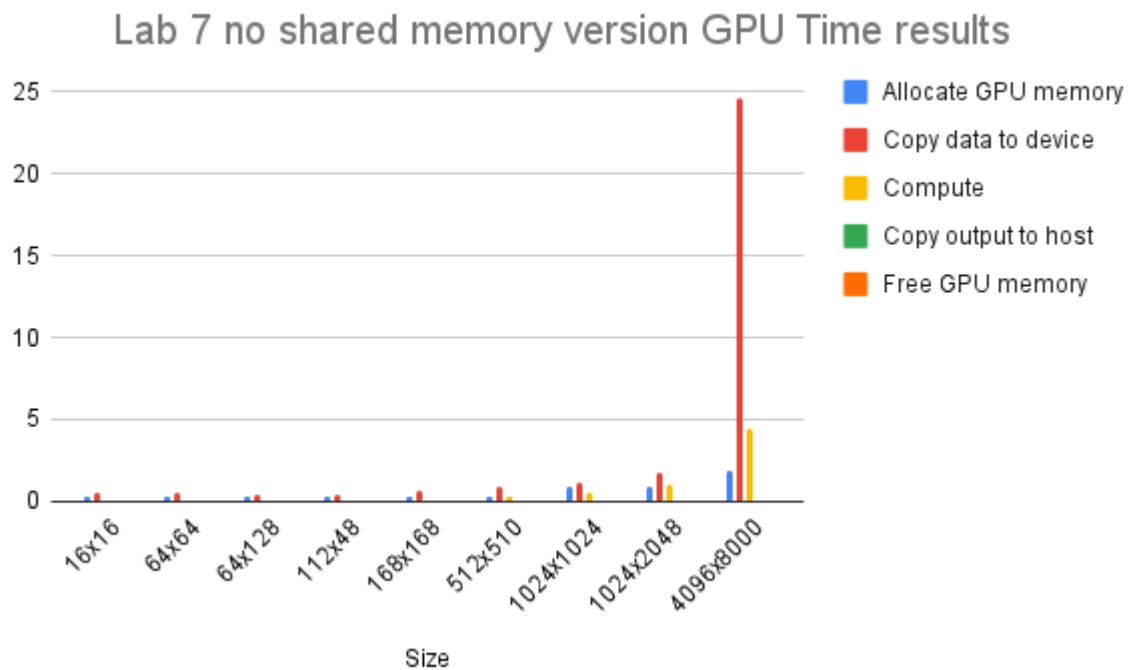


Q2

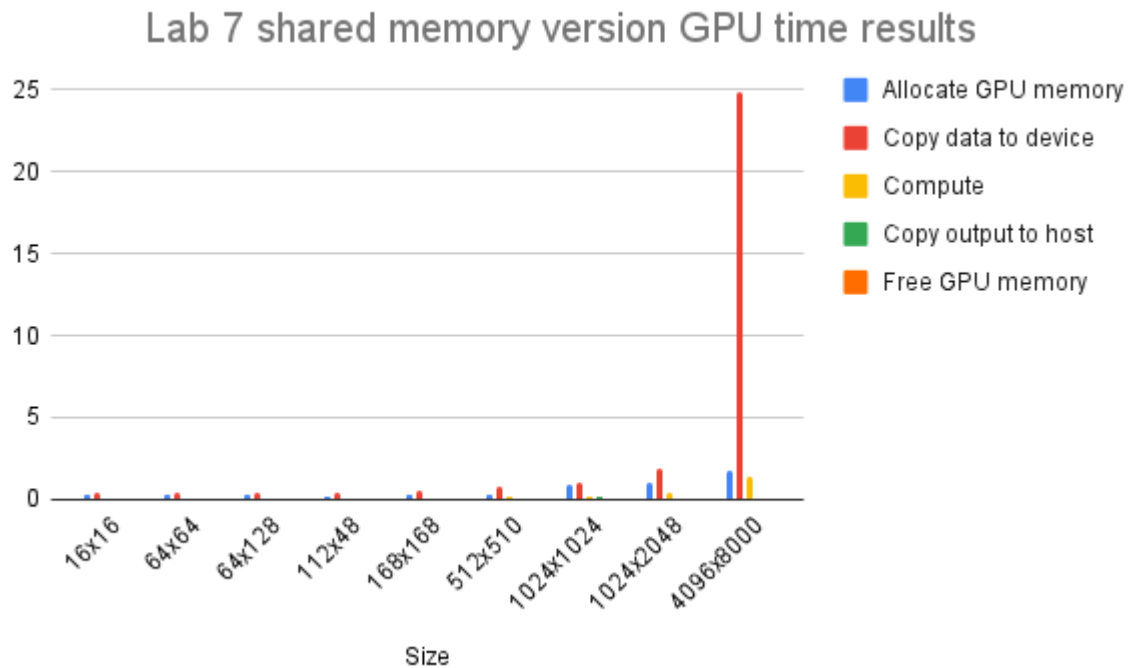
The kernel was run on RTX 3060ti with 8GB of VRAM, Windows 11 WSL Ubuntu 22.04 with thread block size 512.

No shared memory version**Raw data**

Size	Import data to host	JDS Conversion (Host)	Allocate GPU memory	Copy data to device	Compute	Copy output to host	Free GPU memory
16x16	0.122909	0.02967	0.236848	0.485706	0.04551	0.04539	0.00914
64x64	0.611425	0.199988	0.241768	0.558225	0.05621	0.042999	0.00979
64x128	1.16682	0.369336	0.277933	0.453586	0.068799	0.039519	0.01039
112x48	0.736713	0.320417	0.230238	0.443995	0.04445	0.040269	0.00933
168x168	3.09985	1.21502	0.255378	0.610535	0.079999	0.045079	0.01028
512x510	27.0051	11.2913	0.298408	0.939511	0.255288	0.038489	0.01809
1024x1024	126.414	46.3591	0.898852	1.12015	0.550074	0.05312	0.01458

Size	Import data to host	JDS Conversion (Host)	Allocate GPU memory	Copy data to device	Compute	Copy output to host	Free GPU memory
1024x2048	210.289	91.2726	0.950641	1.74912	1.06575	0.04438	0.01483
4096x8000	3179.76	1412.93	1.87354	24.6297	4.47502	0.051489	0.01603

Shared memory version



Raw data

Size	Import data to host	JDS Conversion (Host)	Allocate GPU memory	Copy data to device	Compute	Copy output to host	Free GPU memory
16x16	0.129439	0.031249	0.265468	0.403646	0.050189	0.0489	0.00897
64x64	0.582024	0.197918	0.231298	0.441646	0.055829	0.0433	0.011189
64x128	1.2864	0.377266	0.257517	0.433386	0.059209	0.04248	0.00891
112x48	0.734593	0.268337	0.223678	0.406466	0.05011	0.043159	0.00917
168x168	3.35074	1.19948	0.279577	0.508286	0.061479	0.0429	0.00957
512x510	26.2608	11.088	0.350285	0.763293	0.136878	0.03931	0.0099
1024x1024	116.838	43.6656	0.939201	1.06417	0.222718	0.114039	0.013519
1024x2048	216.277	93.3556	1.03981	1.83005	0.389167	0.03448	0.01012
4096x8000	3321.08	1451.03	1.76329	24.8827	1.44268	0.04236	0.01538